## Attachment B

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Erik Olafsson Senior Planner San Mateo County Transit District 1250 San Carlos Avenue P.O. Box 3006 San Carlos, CA 94070-1306

Subject: Review of Environmental Assessment, CalTrain Electrification Program

Dear Mr. Olafsson:

The City of Sunnyvale has completed it's review of the Environmental Assessment/ Draft Environmental Impact Report for the *CalTrain* Electrification Program. The City has identified the following issues that shall be addressed in the Final Environmental Impact Report/Environmental Assessment.

## 1. Overhead Wire System (OCS) Visual Impacts:

In Section 2.3.2.1, the penultimate paragraph describes the portal alternative as more visually intrusive, however, this may be regarded as a 'matter of taste' conclusion. The trade-off seems to be that the headspan poles and span-wire catenary wires are much taller than the portal, while the portal is lower but includes a much heavier type of construction for the horizontal structural member.

The City prefers a portal configuration as the basic approach. Using colored poles as mentioned in the report as a mitigation (Section 3.1.3, second paragraph), so that coloring might also be considered for portals is preferred. Headspan poles are too tall to camouflage effectively with trees, but tree planting (also mentioned in Section 3.1.3) might do some good near a portal. Graphic studies to enable envisioning specific OCS implementation in Sunnyvale in advance shall be conducted in order to assess visual impacts of the mitigated conditions.

The City believes more attractive architecturally-designed portals

should be developed for use near Sunnyvale Station as well. In addition, the City requests that any additional overhead wire complexity, such as overlaps, be avoided or relocated away from Sunnyvale downtown or the Sunnyvale CalTrain station. There shall be a separate design task involving interaction with City staff which consists of a detailed design review for aesthetics to weed out any superfluous complexity and clutter that creeps into the final design details. Section 3.1.3 promises under "Mitigation", second paragraph, that the Joint Powers Board, "(JPB) will coordinate with local jurisdictions...to develop design guidelines to minimize visual effects". The final design should aspire to simplicity, uniformity, symmetry, etc.; and these objectives and their implementation and enforcement should be made obligatory on the JPB and its designers and construction contractors.

A feature shown in Figures 2.3-1, 2.3-2 and 2.3-3 is an underground duct bank for 'miscellaneous cables' If an underground duct bank is contemplated, the overhead feeders shall be located there as well. This would be more important if there ends up being a need for more that the two overhead feeders as shown and as described in Section 2.3.2.2, last paragraph.

There is one traction power substation proposed for construction in Sunnyvale. It is located north of the *CalTrain* tracks and east of the Lawrence Expressway overhead, as illustrated in Figure 2.3-15. Visual mitigation shall include landscaping.

2. Railroad Gate Down Time: As described in Section 2.3.2.7, much of the existing CalTrain signal system (mostly newly-installed under the 'Baby Bullet' CTX project) will have to be modified and/or replaced because the track circuits are not compatible with electric traction power negative return through the rails. Of greatest significance to the City, the Constant Warning Time feature of state-of-the-art grade crossing signals (especially important at locations near CalTrain stations such as at the Sunnyvale Avenue crossing) is available for non-electrified railroads such as CalTrain is now, but is incompatible with electric railways. This could also affect the Mary Avenue crossing but probably to a lesser degree because trains operate there at full speed.

The report admits that electrification affect on the signal system could create problems by causing extended gate down time. The report also admits that there is no off-the-shelf solution for this,

and that the traffic impact at the CalTrain crossings would be greater than along any other electric railway in the country. Therefore the proposed solution in the report is to solicit equipment suppliers to develop a new technology ("CalTrain is considering a pilot project...") especially for CalTrain based on untried 'new technology'. How this research and development project would interface with the electrification project, and what it would cost, is not fully described. This is a significant, unmitigated impact. Detailed assessment of the resulting impact on traffic flow and delay on Mary and Sunnyvale Avenues at the railroad crossings shall be included in the FEIR. Assessment of additional noise impact due to prolonged sounding of crossing warning bells shall also be provided in the FEIR. Appropriate mitigation shall be identified such as grade separation or feasible crossing warning signal modification using available technology.

- 3. Overbridge Protection Barriers: These are proposed for retrofit to existing bridges crossing CalTrain to preclude objects from falling or being thrown onto the OCS wires. In Sunnyvale, overbridge protection barriers would be installed (see Table 2.3-2) on the Mathilda Avenue, Wolfe Road and Lawrence Expressway overheads and on two pedestrian overheads. These shall be constructed to be aesthetically unobtrusive, and in the case of the Mathilda Avenue bridge, shall meet the City's goals and objectives for design of this bridge to be an architectural gateway to downtown Sunnyvale. The City is in the design stage of a rehabilitation project for this bridge which will incorporate architectural features to promote the gateway aspects of the bridge. The overbridge protection barriers for Caltrain electrification shall be designed to harmonize with the architectural features of the Mathilda Avenue bridge, and minimize the aesthetic impact on the bridge.
  - Section 4.1.1.3 fails to describe the construction impacts of this work on roadway traffic or on pedestrians (i.e.-lane and sidewalk closures) on these bridges.
- **4. Train Noise Issues:** The report states (Page 3-95, third paragraph) that noise level references for the existing gallery cars could not be measured because of the dominant diesel locomotive noise during pass-bys. However, on Page 3-97 is the description of noise measurements obtained for a bi-level *Sounder* coach (A Bombardier-built Seattle area coach, probably on loan to Los Angeles Metrolink, and similar to the new *CalTrain* 'Baby Bullet' cars) on pass-bys on Southern California. As Metrolink is also powered by diesel

locomotives, how were these measurements obtained; and if they were, why could not measurements be obtained for the gallery cars? This shall be explained in the Final EIR, and if there is no reasonable constraint to gathering this information, then information on the existing gallery cars shall be collected and presented in this noise analysis.

Table 3.11-4 summarizes the findings on noise. The format of the table tends to obscure some conclusions. If the *Grand Totals* were to combine the '*Impact*' and '*Severe Impact*' values, and then also to add these resulting numbers together for both the '*Single Family*' and '*Multi-family*' subtotals, a single Impact-number for each Option would result as follows:

| Non-Electrification/ Diesel Alternative,         |       |
|--|-------|
| Residences Impacted:                             | 1,167 |
| Option 1, New Electric Locos & old Gallery Cars, | •     |
| Residences Impacted:                             | 1,099 |
| Option 2, Multiple Unit Cars,                    |       |
| Residences Impacted:                             | 1,510 |
| Option 3, New Electric Locos & new Bi-level Cars | s,    |
| Residences Impacted:                             | 0     |
|  |       |

The City questions the findings that Multiple Unit cars are the noisiest alternative, and suggests that comparison information is inadequate. The FEIR shall provide additional information on noise from existing, modern, well maintained MU systems for comparison purposes.

Another curious aspect of this analysis is that it shows that there is a significant noise reduction achieved by replacing the old gallery cars of Option 1 with new bi-levels of Option 3. Both Options 1 and 3 use electric locomotives, so the net benefit is due to the trailer coach replacement, not anything related to electrification. If this is so, could not the mere replacement of the present galley cars with new bi-levels (already under way by the JPB)--but retaining the diesels--also achieve a noise reduction? The report shall address this possibility.

It is not clear why one of the rolling stock options is to replace the present *CalTrain* fleet of trailer cars so that they can be pulled by electric locomotives. The existing fleet is described as compatible with electric locomotives, and keeping the present fleet is one of

the options. So, excluding the noise analysis, The FEIR shall explain why a fleet replacement option is included in the study.

It is true that gallery cars may be considered functionally obsolete, but their replacement for that reason should not be attached to the unrelated electrification project.

The DEIR report also does not mention that CalTrain has recently acquired new Bombardier bi-level coaches for use on the express CTX service, or describe their compatibility with electric locomotives or highlight the conclusions of the noise study, that these new cars are more quiet. The Final EIR shall incorporate consideration of the new Bombardier coaches, describe their compatibility with electric locomotives, and relate the existing coaches' operation to the noise study of electrification. Taken together with the unavailability of compatible multiple unit electric vehicles (see above), the inclusion of rolling stock replacement in the project scope confuses the assessment of benefits and impacts of electrification, as it goes to the essence of the project purpose. Complete replacement of rolling stock also raises other issues, and is very complex. For example, the wheelchair access to the present fleet is inconvenient and slow, requiring either lifts on the gallery cars or bridge plates for the new bi-levels. If a completely new fleet is contemplated, the objective should be to provide level platform boarding. This might entail platform modifications, etc. The public shall be advised of these matters and the FEIR shall do so.

- **5. Electromagnetic Interference (EMI):** This aspect is discussed in Section 3.17.4. It will probably not be a problem for most of the neighboring land uses in Sunnyvale. However, due to the prevalence of high-tech and special business activities in Silicon Valley, the FEIR shall include, as mitigation, notification and consultation in advance with local neighboring businesses and others at interest about the EMI issues related to the project.
- **6. Scope of Alternatives and Their Benefits:** On the first page of the report (S-1) is the statement, "Electric trains can accelerate and decelerate at better rates than diesel powered trains" (see also Section 2.3.2.6). Although this is perhaps the most compelling benefit described for the proposed project, nowhere in the report is there any data to substantiate this claim.

While one would suppose that it is probably true that multiple unit (MU) self-propelled electric vehicles, with motors on each car, could indeed improve on the acceleration of locomotives, the report does

not define MU rolling stock as central to achieving the goals of the project. Multiple unit rolling stock is only one of three rolling stock options. Also, the report admits on Page 2-39, last paragraph, that there is no existing MU rail vehicle type that is of the correct configuration for service on *CalTrain*. The other two rolling stock options would use electric locomotives, which are available 'off-the-shelf', and therefore are actually much more likely to be part of the actual project. The report (Table 2.3-7) also fails to identify sufficient funding sources for MU fleet conversion.

There is no quantitative data on the acceleration/deceleration characteristics or power/weight ratio information on either diesel locomotives, electric locomotives or MU electric vehicles. The FEIR shall explain why an electric locomotive, even if more powerful, could better a diesel when pulling a short *CalTrain* of five (or even a few more) cars.

All of the rolling stock options as described in Section 2.3.2.5 are lumped together under one Alternative, so that travel time, ridership, etc. is supposed to be the same for the MU and locomotive options. This undermines the premise that acceleration would be improved as there is no comparison of performance between locomotives and MU vehicles.

Indeed, Table 3.15-6 indicates that projected net time savings between the downtowns of San Francisco and San Jose will be only two minutes. Under "Travel Time" on Page 3-130 is the admission that the maximum time savings of only 12 per cent would be for the local trains; express trains would not save more than three percent because they stop less and therefore cannot benefit much from improved acceleration anyway. As a result, all the time-savings benefits listed in Table 3.15-6 are miniscule. The FEIR shall explain how these time savings were calculated without quantitative data on acceleration/deceleration rates.

There are also other implications for MU vs. electric locomotives. The maintenance facilities required should be configured differently. An MU fleet would be more flexible to operate, with very short trains possible off-peak and longer ones during peak periods. More frequent service might be the trend, using shorter MU consists, thus yielding a higher level of passenger service. Perhaps the crew requirement on each train could be reduced to lessen the labor cost component. With more frequent trains, individual train

capacity could be less, thus conventional, single-level, off-the-shelf North American MU cars might be feasible. These are some of the potential benefits of an MU fleet that electrification could make possible. These scenarios shall be addressed in the FEIR in order to provide a complete assessment of the MU alternative.

7. CalTrain Service Disruption During Construction: Section 4.1.1.1 discusses construction operations. On page 4-2 is the statement that construction of OCS would require weekend and other outages including total suspension of passenger service on weekends. The exact extent of these service suspensions is unknown, but Figure 4.1-1 indicates a duration of more than two years for OCS construction.

The JPB approved a two-year suspension of weekend *CalTrain* service for the CTX project, which was a less costly one and thus one of lesser magnitude than the proposed electrification. However, the CTX project will yield considerable passenger benefits, and thus the service suspensions enjoyed adequate community support. If the community is to be asked to endure yet another lengthy service suspension for electrification, will the benefits be perceived as worth while?

- 8. Operating and Maintenance Costs: These are described in Section 2.3.3.3 and Table 2.3-9. There is no description of which O&M costs were calculated. For example, are there anticipated net fuel cost savings, and how do these compare to maintenance costs for 77 miles of a complex OCS system? The O&M costs of the Non-electrified Alternative shall be shown in the FEIR for comparison with the O & M costs of electrification alternatives.
- 9. **Public Perception**: On Page S-3, third bullet, is the thesis that: "An electrified Caltrain would better address Peninsula commuters' vision of an environmentally friendly, fast, reliable service. This will also stimulate ridership. Additionally, an electrified Caltrain system would set the stage for an expanded regional electric express and, potentially for a statewide high-speed rail service..."

On Page 3-130 in the section on ridership is the contention that: "...a major deficiency of the currant CalTrain service has been its image of an outmoded operation that dates back to the freight rail-oriented Southern Pacific. The continued use of diesel locomotives...has been an important factor in sustaining this image...a factor not addressed in ridership models. Electrifying the

CalTrain service would increase its consumer appeal...The Electrification Program would more closely meet CalTrain riders' vision of an updated, clean, high-tech type CalTrain."

The above statements are best characterized as promotional spin; they certainly are not borne out by any analysis of the report, and are actually in conflict with some of the report conclusions regarding travel time and ridership, and also largely in conflict with reality. There was no rider or other attitudinal study undertaken to ascertain peoples' views or "vision" or any determination of "consumer appeal" on whether diesel locomotives are "outmoded" or the like. Case in point, the new CalTrain diesels are produced by designers that take into account market appeal in industrial design and appearance and are very much more modern looking than any of the boxy electric locomotives or heavy electric MUs on the market).

On the other hand, a most common public complaint about light rail and similar projects are the unsightly overhead wires. Electric trains are not necessarily "high-tech" either; they date back to the 1880's and predate the diesel engine. Diesel-powered CalTrain has always been reliable with an excellent on-time record, and even the old, much reviled Southern Pacific rightly took pride in the punctual schedule performance of its Peninsula trains. But there is no discussion in the report (Section 3.10) about the consequences of local or general power failures on the reliability of an electrified CalTrain.

Accordingly, the above statements of the report appear to reflect promotion of a political agenda, and as such do not have a place in a technical study. Statements, such as those above referenced, which do not have a basis in objective fact as it relates to the environmental impacts of electification shall be omitted from the FEIR.

10. Relationship to High Speed Rail: There is considerable question whether electrification of CalTrain really "set the stage" for high-speed rail entry onto the Peninsula. There actually is reason to believe that electrifying CalTrain now would set back the prospects for high speed rail in the corridor. Statements to the effect that electrification would facilitate high speed rail in the Caltrain corridor shall be deleted from the FEIR unless detailed high speed rail alignment and facilities design analyses are conducted and available to support this conclusion.

The major prerequisite for high speed rail in the JPB corridor is a continuous four-track rail line and probably its complete grade-separation. The CTX project will provide four tracks in only a few short segments of *CalTrain*. The majority of the line will remain two tracks for now. If the two-track segments are electrified in place, it will make quadruple-tracking those segments, as well as new grade separations anywhere on the line, much more costly.

If areas of remaining double-track need to be shifted to accommodate two more tracks, or raised or lowered for new grade separations, much of the pre-existing OCS system may have to be demolished and rebuilt in many long segments. This is because the exact future configuration of a multi-track line has not been determined. Construction staging of any future track shooflys (detours) will have to be provided with temporary OCS facilities, then the OCS rebuilt again. (One possible mitigation may be to obtain diesel locomotives to pull trains during construction so the OCS can be abandoned, demolished and rebuilt). All of this will add to the cost of high-speed rail and so diminish its feasibility.

A better way to promote future high-speed rail would be to use any available funds to extend the four-track segments and to add grade separations. This would also have more direct and immediate benefits for *CalTrain* express train service and public safety. Only afterwards should the need for electrification be addressed.

11. Consideration of Reasonable Alternatives: The DEIR contains a copy of a City of Sunnyvale letter of September 15, 2000 on the scope of the analysis, bound into an appendix. That letter states that there should be 'a reasonable range of alternatives', including light rail (LRT), addressed in the JPB study. This did not happen.

Information in the DEIR indicates that electrification by conversion only to electric locomotives but not to multiple unit (MU) self-propelled electric cars, would probably fail to achieve many of the original project goals. Based on the report, it seems that suitable MUs are not available in a configuration (double deck cars) that the JPB believes that it needs. Nor is there sufficient funding identified for full MU conversion.

If MUs are not acquired, then there are much reduced benefits to the project. The report failed to analyze all the operational and cost differences, advantages and disadvantages between MUs and electric locomotive-hauled trains.

But if MUs are desired as the goal, then light rail vehicles (LRVs) should also be an alternative, because the entire *CalTrain* fleet would then need to be replaced. As it currently is reported, fleet replacement with electric locomotives and new bi-level coaches is the preferred alternative. LRVs are now available with 65 mph speed capabilities, and there are examples in Europe that have much more attractive passenger amenities than any in use in North America. Light rail would have the following advantages:

- ♦ Smaller crewing requirements, hence;
- ♦ Ability to run more frequent service at lower cost
- ◆ Potential through-running of LRV trains from Santa Clara VTA lines to San Francisco MUNI lines, and;
- ♦ *CalTrain* could get to SF downtown by sharing the proposed MUNI subway, instead of a separate mega-project to the Transbay Terminal
- ♦ Potential for future LRT spur line development to major activity centers such as Stanford University and the airports, etc.
- ♦ Less costly grade separation, due to steeper hill-climbing ability
- ◆ Faster emergency stopping ability with electromagnetic track brakes
- More convenient handicapped/ wheelchair access

There are also disadvantages and complexity of course, to this or any alternative. There should be a public debate on the subject, however. The FEIR shall include an analysis of an LRT alternative, as requested in the scoping letter sent by the City of Sunnyvale September 15, 2000.

The option to extend BART shall also be BART has already reached south to Millbrae. BART is also under preliminary design to San Jose and up to the City of Santa Clara, almost to Sunnyvale. This was after Santa Clara County voters recently endorsed BART development. So the remaining gap in BART is much reduced since the last study of its extension to the Peninsula. The level of investment in *CalTrain* electrification will likely by policy and public opinion preclude any investment to extend BART on the Peninsula. The FEIR shall include a discussion of extension of BART as an alternative for providing the benefits attributed to

electrification.

12. Caltrain Improvement Priorities: The City of Sunnyvale, other cities, CalTrain riders and the public (and high-speed rail also) might be better served if the monies contemplated to be spent on this project were instead applied to an accelerated program of full grade separation along the line. This will address current and anticipated train operation and traffic issues at grade crossings; address train and crossing noise issues both current and anticipated; and best facilitate future high speed rail.